What is claimed is:

1.   A data encoding apparatus for encoding data for every data block of a predetermined number of pixels of data, comprising:

5   a data string rearranging means for outputting data of sequentially input data blocks in a predetermined output sequence corresponding to an input sequence;

           a block end data detecting means for detecting input data not coinciding with reference data and latest

10   in said output sequence from among the input data of said data string rearranging means as block end data;

           a block end judging means for judging whether or not the output data of said data string rearranging means is said block end data; and

15   an encoding means for sequentially generating codes in accordance with the output data of said data string rearranging means, generating a first code after the generation of the codes in accordance with the output data when it is judged at said block end judging means

20   that the output data is said block end data, and terminating the encoding of the data block containing the output data.

2.   A data encoding apparatus as set forth in claim 1, wherein said encoding means counts the number of said

25   reference data continuously output from said data string

rearranging means, generates a code in accordance with said count of continuous reference data and the value of the data which is not the reference data output after the continuous reference data, and generates a second code

5   and subtracts said predetermined value from the count when said count reaches a predetermined value.

3.   A data encoding apparatus as set forth in claim 1, wherein said data string rearranging means comprises

a storing means for storing said input data at
10   a designated address upon receipt of a data write request and reading the data stored at the designated address upon receipt of a data read request,

a writing means for outputting said data write request to said storing means, generating predetermined
15   write addresses in accordance with the input sequence of said input data corresponding to the input data, and storing said input data at corresponding write addresses of said storing means, and

a reading means for outputting said data read
20   request to said storing means, sequentially generating predetermined read addresses, and sequentially reading the data stored at the read addresses of said storing means, and

wherein said block end data detecting means
25   detects the address read latest in said reading means

among said write addresses of said input data not

coinciding with said reference data as the block end

address, and

wherein said block end judging means judges

5   that the output data corresponding to the read address is

said block end data when said read address and said block

end address coincide.

4.   A data encoding apparatus as set forth in claim

3, wherein

10   said reading means generates successively

increasing or decreasing addresses, and

said block end judging means detects the

largest or smallest address among the transformed data

write addresses W_ADD not coinciding with the reference

15   data as the block end address.

5.   A data encoding apparatus as set forth in claim

4, wherein said block end judging means comprises:

an address holding means for holding an initial

address at the input starting time of the block data,

20   receiving an address holding request, and holding said

write address as said block end address;

a reference data detecting means for detecting

noncoincidence of input data of said data string

rearranging means and said reference data;

25   an address comparing means for comparing the

relative sizes of the write address generated at said

writing means and the address held in said address

holding means; and

an address holding requesting means for

5   requesting holding of a write address corresponding to

said input data to said address holding means in

accordance with results of comparison at said address

comparing means when noncoincidence of said input data

and said reference data is detected at said reference

10   data detecting means.

6.   A data encoding method for encoding data for

every data block of a predetermined number of pixels of

data, including:

a block end data detecting step for detecting

15   data not coinciding with reference data and latest in a

predetermined output sequence corresponding to the input

sequence of the input data from among the data of

sequentially input data blocks as the block end data; and

an encoding step for outputting said input data

20   in said output sequence, sequentially generating codes in

accordance with the output data when said output data is

not said block end data, generating a first code after

the generation of a code in accordance with the output

data when said output data is said block end data, and

25   terminating the encoding of the data block containing the

output data.

    7.   A data encoding method as set forth in claim 6, wherein in said encoding step, the processing is carried out to count the number of continuously output reference

5   data, generate a code in accordance with said count of the continuous reference data and the value of the data which is not reference data output after the continuous reference data, and generate a second code and subtracts said predetermined value from the count when said count

10   reaches a predetermined value.

    8.   A data encoding method as set forth in claim 6, wherein said block end data detecting step includes

        a step of generating predetermined write addresses in accordance with the input sequence of said

15   input data corresponding to the input data,

        a step of detecting the address read latest in said output sequence among said write addresses of said input data not coinciding with said reference data as the block end address, and

20   a step of storing said input data at the corresponding write addresses of the storing means, and

        wherein said encoding step includes

        a step of sequentially generating predetermined read addresses,

25   a step of sequentially reading the data stored

at the read addresses of said storing means, and

a step of sequentially generating codes in

accordance with the output data when said read address

and said block end address do not coincide, while

5   generating the first code after the generation of the

code in accordance with the output data when they

coincide, and terminating the encoding of the data block

containing the output data.

9.   A data encoding method as set forth in claim 6,

10   wherein

in the step of detecting said block end

address, the largest or smallest address among the write

addresses of the input data not coinciding with the

reference data as the block end address is detected and

15   in the step of generating said read address,

successively increasing or decreasing addresses is

generated.

10.   A data encoding method as set forth in claim 9,

wherein the step of detecting said block end addresses

20   repeats the following steps of:

a step of detecting said block end address,

a step of holding an initial address at the

input starting time of the block data;

a step of detecting noncoincidence of said

25   input data and said reference data;

a step of comparing the relative sizes of the
generated write address and the held address; and

a step of holding a write address corresponding
to said input data replacing said held address in

5   accordance with results of comparison at the step of
comparing the relative sizes when noncoincidence of said
input data and said reference data is detected at said
step of detecting noncoincidence.

11. A camera system for compressing and encoding

10   generated image data for every data block of a
predetermined number of pixels of data, comprising:

an image pickup means for picking up a desired
image and generating image data;

a transforming means for transforming said

15   generated image data based on a predetermined quadrature
transform for every data block;

a data string rearranging means for
sequentially receiving as input said orthogonally
transformed image data for every data block and

20   outputting the input image data in a predetermined output
sequence corresponding to the sequence of input of the
input image data;

a block end data detecting means for detecting
input image data not coinciding with predetermined

25   reference data and latest in said output sequence from

among the input image data of said data string

rearranging means as block end data;

      a block end judging means for judging whether

or not the output image data of said data string

5   rearranging means is said block end data;

      an encoding means for sequentially generating

codes in accordance with the output image data of said

data string rearranging means, generating a first code

after the generation of the code in accordance with the

10   output image data when it is judged at said block end

judging means that the output image data is said block

end data, and terminating the encoding of the data block

containing the output image data; and

      a processing means for performing predetermined

15   processing with respect to the image data encoded at said

encoding means.

    12. A camera system as set forth in claim 11,

wherein said processing means performs at least one

processing of recording, reproduction and display, or

20   transmission with respect to said encoded image data.

    13. A camera system as set forth in claim 11,

wherein said encoding means counts the number of said

reference data continuously output from said data string

rearranging means, generates a code in accordance with

25   said count of continuous reference data and the value of

the data which is not the reference data output after the

continuous reference data, and generates a second code

and subtracts said predetermined value from the count

when said count reaches a predetermined value.

5   14.   A camera system as set forth in claim 13,

wherein said data string rearranging means comprises

          a storing means for storing said input image

data at a designated address upon receipt of a data write

request and reading the image data stored at the

10   designated address upon receipt of a data read request,

          a writing means for outputting said data write

request to said storing means, generating predetermined

write addresses in accordance with the input sequence of

said input image data corresponding to the input image

15   data, and storing said input image data at corresponding

write addresses of said storing means, and

          a reading means for outputting said data read

request to said storing means, sequentially generating

predetermined read addresses, and sequentially reading

20   the image data stored at the read addresses of said

storing means, and

          wherein said block end data detecting means

detects the address read latest in said reading means

among said write addresses of said input image data not

25   coinciding with said reference data as the block end

address, and

      wherein said block end judging means judges
that the output data corresponding to the read address is
said block end data when said read address and said block
5   end address coincide.